ITS PROJECT APPLICATION FORM
FY 2009-2013 TIP

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2009-2013 MAG Transportation Improvement Program. Currently funding is available only for **FY 2013**.

Separate application forms are available for bicycle, pedestrian, air quality, and transit projects. Freeway, street and rail transit projects will be programmed in a separate process.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.

- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.

- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **PLEASE NOTE: Part C is only available electronically.** It is available at: http://www.mag.maricopa.gov/project.cms?item=413, or you can contact Leo Luo: lluo@mag.maricopa.gov, and he will send you the electronic file.

Deadlines and Transmittal Instructions: All sections should be completed and returned to MAG Offices by **5:00 p.m. September 7, 2007.** Please e-mail Judy Tadlock at MAG, jtadlock@mag.maricopa.gov this application (Part A & B). Part C is only available electronically as noted above. Please e-mail Leo Luo the completed Part C, excel file to lluo@mag.maricopa.gov. The mailing address and FAX number for the MAG offices is:

ATTN: Judy Tadlock
Maricopa Association of Governments
302 North 1st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at http://www.mag.maricopa.gov/project.cms?item=413. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Eileen Yazzie at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Michael Pacelli, Traffic Engineer**	2.	Telephone: **(480) 358-3065**
3.	E-mail **michael.pacelli@queencreek.org**	4.	Date: **9/7/2007**

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part A: Project TIP Listing Information and Description

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:	2. Year (Please check box):
Town of Queen Creek	☒ FY 2013

3. Project Location (The project limits if applicable):

Various Locations Town-wide (see project description)

4. Type of Work (Description of the work to be performed):

Ten Wireless Traffic Signal Connections

This project will expand on the centralized traffic signal system and fiber optic communications infrastructure planned to be built using CMAQ, Town, and Developer funds in other projects between FY2008 and FY2012. The project specifically proposes to add an additional 10 traffic signals (which are currently existing, under construction, or planned to be built by 2013) to the Town's signal system using wireless communications.

Wireless connections will be installed to link each signal to the Town's planned Traffic Management Center by way of point-to-point radio links between each subject intersection and a nearby signal with a fiber optic connection to the TMC, or to a node location on the Town Information Technology Division's wireless backbone, as appropriate.

The following intersections are currently proposed to be added to the signal system using wireless connections:

1. **Queen Creek Rd / Crismon Rd (existing signal)**
2. **Queen Creek Rd / Signal Butte Rd (planned signal)**
3. **Ocotillo Rd / Sossaman Rd (signal under construction)**
4. **Ocotillo Rd / Hawes Rd (signal under construction)**
5. **Ocotillo Rd / Crismon Rd (existing signal)**
6. **Ocotillo Rd / Queen Creek High School (existing signal)**
7. **Ocotillo Rd / Signal Butte Rd (planned signal)**
8. **Chandler Heights Rd / Power Rd (existing signal)**
9. **Chandler Heights Rd / Sossaman Rd (planned signal)**
10. **Chandler Heights Rd / Hawes Rd (signal under construction)**

Note that the exact intersections to be included may need to be adjusted at project implementation as the precise availability of fiber optic infrastructure in 2013 is uncertain at the time of this application, as there are many roadway projects currently under design and construction.

The estimated project cost of $15,000 per intersection is proposed to include all necessary wireless communications equipment, an in-cabinet network switch, serial-to-ethernet converters, design support services, installation, setup, and system testing.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):	6. Type of Federal Funds Requested (Please check box.):
$ 105,000	☐ MAG STP ☒ CMAQ

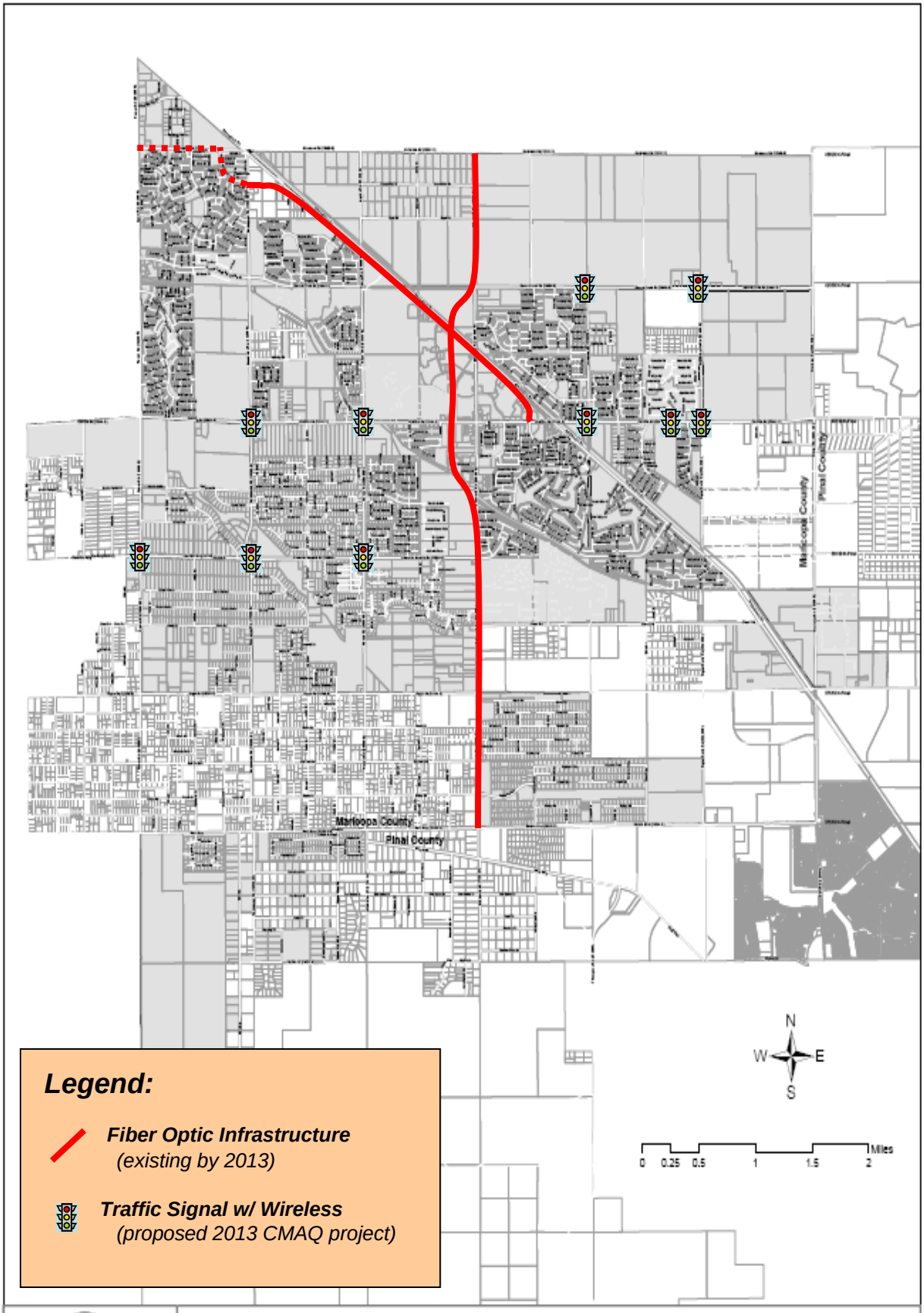
ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part A: Project TIP Listing Information and Description

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):	8. Type of Local Funds to be Used: (Please check only one box.):
$ 45,000	☐ HURF ☐ Impact Fees ☒ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify: _____

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

$ 150,000

10. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.



Legend:

Fiber Optic Infrastructure
(existing by 2013)

Traffic Signal w/ Wireless
(proposed 2013 CMAQ project)

Town of Queen Creek
Community Development
Map Date: 5-1-07

Town of Queen Creek Streets Map

Queen Creek Town Boundaries

Streets shown in italics are proposed future streets.

This map is intended for informational purposes only, please see the appropriate agency for specific information.

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **Ocotillo Rd – 15,000+** **Chandler Hts Rd – 10,000+** **Queen Creek Rd – 6,000+**	2. Name of the Roadway Section Used for the ADT Estimate: **Ocotillo Rd –** **East of Ellsworth Rd** **Chandler Heights Rd –** **East of Power Rd** **Queen Creek Rd –** **East of Ellsworth Rd**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **2-4 lanes**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **Unchanged** **2-4 lanes**	6. Length of the Facility (in miles): **Ocotillo Rd – ~5 miles** **Chandler Heights Rd – ~3 miles** **Queen Creek Rd – ~2 miles**
7. Township Coordinate of the Midpoint of the Facility: **T2S**	8 Range Coordinate of the Midpoint of the Facility: **R7E**	9. Section Coordinate of the Midpoint of the Facility: **S16**

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part B: CMS and CMAQ Data

10. If the project improves traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **N/A**
(posted typically = 45 MPH)

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐ Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐ Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☒ Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐ Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐ Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐ Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
☐ Includes FMS Improvements
☒ The Project Conforms to Local Land Use Plans
☒ The facility is on the adopted MAG Roads of Regional Significance Network
☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

1 signal
Power & Chandler Hts

12 Management System (Please check only <u>one</u> box)

☒ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

Priority 2

Part C: MAG Technical Committee Additional Information

This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **Part C is only available electronically. It is available at: http://www.mag.maricopa.gov/project.cms?item=413, or you can contact Leo Luo: lluo@mag.maricopa.gov, and he will send you the electronic file.**

Contact Information

Please contact Sarath Joshua or Leo Luo at (602) 254-6300 or sjoshua@mag.maricopa.gov, lluo@mag.maricopa.gov for additional information or questions.

FY 2009 - 2013 TIP - Programming 2013
MAG ITS Project Data Form

Please enter project data ONLY in highlighted cells, save the file with the lead agency name in it - ie. Mesa ITS Projects.xls

Submit this Excel workbook to MAG via email to: LLUO@MAG.MARICOPA.GOV

Please use one worksheet per project, with the tab at the bottom indicating agency priority

Links to various websites are provided for additional information and help

The worksheet titled "Example" shows an example on how to enter Data in the highlighted areas. If errors are detected alerts will pop-up in red text.

The worksheet titled "HELP" shows how to figure out your project's ITS Subsystems & Architecture Flows

Please enter required information in highlighted cells

A. Project Title & Sponsor

Lead Agency	Town of Queen Creek
Other Partnering Agencies	N/A
ITS Project Title:	Ten Wireless Traffic Signal Connections

B. Project Goals & Objectives

Project Goals:

The project goal is to expand on the centralized traffic signal system and fiber optic communications infrastructure planned to be built using CMAQ, Town, and Developer funds in other projects between FY2008 and FY2012.

Objectives:

The objective is to add an additional 10 traffic signals (which are currently existing, under construction, or planned to be built by 2013) to the Town's signal system using wireless communications.

The following intersections are currently proposed to be added to the signal system using wireless connections: Queen Creek Rd / Crismon Rd, Queen Creek Rd / Signal Butte Rd, Ocotillo Rd / Sossaman Rd, Ocotillo Rd / Hawes Rd, Ocotillo Rd / Crismon Rd, Ocotillo Rd / Queen Creek High School, Ocotillo Rd / Signal Butte Rd, Chandler Heights Rd / Power Rd, Chandler Heights Rd / Sossaman Rd, and Chandler Heights Rd / Hawes Rd.

C. Define ITS Subsystems, Achitecture Flows, Communications & Arterial ITS Applications

SELECT ITS Subsystems: http://www.iteris.com/itsarch/html/entity/pae	Yes or No
Center Subsystem	Yes
Traveler Subsystem	No
Field/Roadside Subsystem	Yes
Vehicle Subsystem	No
Communications Subsystem	Yes

Architecture Flows (Information flows among four subsystems: Traveler, Center, Roadside and Vehicle Subsystems)

From Subsystem	To Subsystem	Information flow
Roadside Subsystem-CCTV,	Center	signal status, video
Center Subsystem-TOC	Roadside	signal control, video

Communications: Required communications medium for data sharing with other agencies: (if applicable)

From agency	To agency	data flow	Medium	Existing?	Future (year) mm/yyyy	Check Date with Project Schedule

Arterial ITS applications	Relevant Applications (ENTER: Yes or No)	Applicable ITS User Services Addressed http://www.iteris.com/itsarch/html/user/userserv.htm	Applicable ITS Market Packages http://www.iteris.com/itsarch/html/mp/mpindex.htm
1. Traffic Management	Yes	1.6	ATMS01, ATMS03
2. Transit Operations Support	No		
3. Interagency Data Sharing and Control	No		
4. Integrated Traveler Information	No		
5. Archived Data Management	No		
6. Incident Management	Yes	1.7	ATMS08
7. Freeway-Arterial	No		

D. Project Budget

(1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1 million per program year per agency.

(2) Joint projects that involve 3 or more agencies may exceed $1m in federal cost. Federal cost of each agency's component will not be counted against the $1m limit.

(3) There is no limit on the number of projects that may be submitted by an agency, but each project requires the 30 percent local cost match

(4) For multijurisdictional projects, the federal and local shares of each partnering agency must be shown below.

	Federal Cost	Local Match (min 30%)	Total Cost
Lead Agency	$105,000.00	$45,000.00	**$150,000.00**
Partnering Agency#1			**$0.00**
Partnering Agency#2			**$0.00**
Partnering Agency#3			**$0.00**
Total	$105,000.00	$45,000.00	$150,000.00
Cost percentage	**70.0%**	**30.0%**	

Note: Each participating agency should provide at least 30% local match for its share of the total cost

E. Project Schedule

The following project milestones and schedules are based on a typical project procurement process. Please select applicable milestones. Some ITS projects may follow an abbreviated process. ENTER estimated time for such a process

Standard Project Milestones	Default Schedule for Process	Applicable Milestones (ENTER - Yes OR No)	Estimated Time to Milestone (ENTER #Months)	Estimated Date (Enter> mm/yyyy)
Apply for ADOT project number				Nov-2012
Receipt of ADOT project number	Jan-2013	Yes	2	Jan-2013
Initial DCR	Feb-2013	No		NA
Final DCR	Mar-2013	No		NA
30% Preliminary Plans, Cost Estimate and Report	May-2013	No		NA
60% Preliminary Plans, Cost Estimate and Report	Jul-2013	Yes	5	Apr-2013
Final Preliminary Plans, Cost Estimate and Report	Sep-2013	Yes	7	Jun-2013
Environmental Clearance	Jul-2013	No		NA
Utility Clearance	Aug-2013	Yes	7	Jun-2013
Right-of-Way Clearance	May-2013	Yes	7	Jun-2013
Approval of IGA	Nov-2013	Yes	14	Jan-2014
Obligation authority of Federal funds	Dec-2013	Yes	8	Jul-2013
Advertised Date	Feb-2014	No		NA
Final Deployment	Aug-2014	Yes	12	Nov-2013

F. System Maintenance and Operations

Current staff resources available for ITS operations at the local agency (FTEs)	2
Additional staff resources required for fully utilizing features added by project (FTEs)	0
Estimated current annual ITS operations & maintenance budget	$10,000
Estimated additional annual operations & maintenance funds required for features added by project	$0
Estimated DATE from when required additional O&M funds will be available	N/A

check project schedule

Other comments:

G. Systems Engineering Analysis Requirement

Commitment to address the federal requirement for Systems Engineering Analysis:
Agency's intent to follow the process described in the 'V' diagram (See Appendix A of Arterial ITS Plan) during the project development process

The project sponsor or lead agency intends to incorporate the Systems Engineering Analysis in the scope of work for the project's Design Concept Report. The Systems Engineering Analysis will be carried out based on the document Systems Engineering for ITS published by FHWA in Janaury 2007. A guidelines document prepared by FHWA (AZ office) and MAG dated August 2006 is also available (both are posted at the MAG website).